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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,763	10/17/2003	Akiyoshi Suzuki	00684.001521.13	9819

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EXAMINER	
BRAUN, FRED L	

ART UNIT	PAPER NUMBER
2852	

DATE MAILED: 04/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/686,763	SUZUKI ET AL.	
	Examiner	Art Unit	
	Fred L. Braun	2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 07/836,509.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/17/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese publication by Horiuchi et al (61-91662) in view of Jewell et al.

All of the claimed structure recited in claim 1 is disclosed by the Japanese publication by Horiuch et al (61-91662) except for the specific use of a fine pattern for

the mask or reticle which has linear features extending in orthogonal first and second directions.

More specifically the Japanese publication by Horiuchi et al discloses the use of a primary light source 1 (Figs. 5), and an illumination system 11, 4, 5, 9, 12, 7 (Fig. 5) having means for forming with light from the primary light source 1 (Fig. 5) a secondary light source having decreased intensity portions at a center thereof and on first and second axes defined to intersect with each other at the center and along first and second axes for illuminating the fine pattern on the mask or reticle 8 (Fig. 5) and a projection optical system 14 (Fig. 5) for projecting on a wafer 15 (Fig. 5) or predetermined plane the fine pattern on the mask 8 which is illuminated with light from the secondary light source. The Japanese publication by Horiuchi et al further discloses on pages 12, lines 19-26 of the attached English translation that using only that light on the periphery of the secondary light source to illuminate the fine pattern on the mask or reticle 8 further increases the resolution of the image of the pattern produced on the wafer 15 (Fig. 5). The Japanese publication by Horiuchi et al achieves the desired peripheral light pattern by positioning a special diaphragm or aperture plate 9 (Fig. 3) at the light exit side of the optical integrator 5 (Fig. 5) which blocks the secondary light at the center of the optical axis thereby creating decreased or zero light intensity at the center or optical axes and along the axes or radials that extend out from the center of the optical axis. It is submitted that the claim is of such breadth that it is not limited to the fine pattern of the mask extending along the X and Y axes (i.e. 0^0 to 180^0 orientation for the X axis and 90^0 to 270^0 orientation for the Y axis), respectively, and that the first

and second directions of said fine pattern could extend along the 170^0 , 350^0radials for the X axis and the 80^0, 260^0 radials for the Y axis, respectively, from the center of the optical axes of the image wise projection device of Horiuchi et al. Furthermore it is submitted that the publication of Horuichi et al (page 11, lines 17-20 of the English translation) suggests to one having ordinary skill in the art that the number of apertures along the periphery of the special diaphragm can be greater or less than that shown in Figure 3. Moreover, it is further submitted that it is obvious to one having ordinary skill in the art that the light intensity of the portions of the secondary light sources which pass through the apertures on the outer periphery of the special aperture plate 9 of the Japanese publication by Horiuchi et al will inherently decrease to about zero at the center or optical axis of said aperture plate 9 since the light transmittance is disclosed on page 11, lines 4-12 of the English translation of Horiuchi et al as being completely blocked when approaching the center. Further, it is submitted that the Japanese publication by Horiuchi et al suggests to one having ordinary skill in the art that the number of apertures can be less than or greater the number shown by Figure 3 (i.e. four apertures) since the apertures of same are created by opening holes in the metal plate (page 11, lines 17-20 of translation).

The patent to Jewell et al shows that it is well known in the art to provide the reticle or mask 18 (Fig. 2) of an imagewise projection device with a two dimensional image pattern or fine pattern D (Fig. 2) having linear features extending in orthogonal first and second directions as well as numerous other fine linear patterns and that the

resolution of these fine patterns is a problem that can be solved by different techniques (column 1, lines 20-51; and column 4, line 39 through column 5, line 2).

Therefore, to use the fine pattern having linear features extending in orthogonal first and second directions when reproducing a two dimensional image pattern on the wafer or substrate, as suggested by the patent to Jewell et al, as the fine pattern for the mask or reticle of the Japanese publication by Horiuchi et al, would be an obvious modification of the prior art to one having ordinary skill in the art since the resolution of the fine pattern used in Horiuchi et al is improved and/or increased by using the special diaphragm or aperture plate 9 (Fig. 3) of the Japanese publication by Horiuchi et al.

5. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

6. Claim 1 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of prior U.S. Patent No. 5,305,054 to Suzuki et al. This is a double patenting rejection.

The recitation of the expression “characterized by” in the preamble of the subject application vis-à-vis the recitation of “said method comprising” in the preamble of claim

1 of the patent to Suzuki et al (5,305,054) is not considered to be a difference in scope between said claims which would preclude a statutory double patenting rejection.

7. Any inquiry concerning this communication should be directed to Fred L Braun at telephone number (571) 272-2132.

Fred L Braun

FRED L. BRAUN
PRIMARY EXAMINER
ART UNIT 2852